

## Integrating a simplified P-N radiation model with edmfoam1.5: model assessment and validation

### Abstract :

This work compliments our recently published work of implementing the eddy dissipation turbulent combustion model in OpenFOAM [1]. The major update proposed herein is linking the EdmFoam1.5 solver with radiation modeling libraries in OpenFOAM. The new solver was validated against experimental data for jet and swirling Sydney flame (SM1). Each case was modeled with/without radiation modeling. The results have a fair agreement in general. In jet flame cases, the radiation modeling has a good impact on refining the predicted results. However it has not the same great effect on the swirling flame case. A review of the EDM applications in different reacting flow problems is also presented and discussed.